IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

MIZUTANI

Atty. Ref.: 2018-496

Serial No. 09/694,345

Group: 2879

Filed: October 24, 2000

Examiner:

For: METHOD OF MANUFACTURING SPARK PLUG WITH NOBLE METAL CHIP FOR INTERNAL COMBUSTION ENGINE

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March 27, 2003

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

INFORMATION DISCLOSURE STATEMENT

Attention is directed to the attached UK Search Report for a UK counterpart of this application and each reference cited therein. A PTO-1449 is also attached.

Official consideration and citation of each such reference is requested.

Respectfully submitted,

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Sheet 1 of 1

INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

ATTY. DOCKET NO.	SERIAL NO.
2018-496	09/694,345
APPLICANT	
MIZUTANI	
FILING DATE	GROUP
October 24, 2000	2879

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE

FOREIGN PATENT DOCUMENTS

		DOCUMENT	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES	TRANSLATION NO
		06-045049	02/1994	Japan			PARTIAL	

OTHER DOCUMENTS (including Author, Title, Date, Pertinent pages, etc.)

*Examiner		Date Considered	

Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to application.

Form PTO-FB-A820 (Also PTO-1449)

Your ref:	P10061GB KMB	Examiner:	Dr Steve Chadwell
Application No:	GB 0026139.6	Tel:	01633 814556
Applicant:	Denso Corporation	Date of report:	24 February 2003
Latest date for reply:	26 August 2003	Page 1/1	

Patents Act 1977
Examination Report under Section 18(3)

Inventive step

1. The invention as defined in claims 1 and 4 is obvious in view of what has already been disclosed in the following documents:

GB 2306196 A	(DENSO)	see page 11 line 20 to page 14 line 9, page 10 line 23 to page 11 line 3, page 17 lines 17-24 and figures 3A to 3D
JP 06-045049 A	(NGK)	see figures and PAJ abstract in particular

2. I regret that specification JP 06-045049 A was not cited on the section 17 search report. It has been cited after extending the search to include UKC mark B3R (RAC) and IPC terms B23K 11/- and 26/- and H01T 21/02.

3. These documents both disclose the manufacture of a spark plug in which a noble metal chip is attached to the ground electrode and/or central electrode of the spark plug by (i) resistance welding to locally melt the electrode while applying pressure to the chip, and (ii) laser welding the chip to the electrode. Although these documents do not appear to specifically refer to control of the current energy and/or supply time during the resistance welding step, it is considered that a man skilled in the art would consider it obvious to do so. It is obvious that supply of the current would be stopped once it is detected that the chip is embedded into the electrode by a certain amount. It is noted that page 9 lines 13 to 17 of the patent in suit states that the progress of the chip into the electrode may be "noticed visually". A man skilled in the art would know that the resistance welding step in specifications GB 2306196 A or JP 06-045049 A would need to be stopped once it is seen that the chip is well embedded in the electrode. Therefore, claim 1 does not appear to involve an inventive step.

4. The chip in specification GB 2306196 A can be made of a number of different materials such as Ir, Ir-Pt, Ir-Pt-Ni, Ir-Rh, Ir-W, Ir-Al, Ir-Si, Ir-Y or Ir-Y_2O_3, and it seems likely that the chip in specification JP 06-045049 A can be made from at least one of these materials. Therefore, claim 4, being dependent on claim 1, also appears to lack an inventive step.